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10/686,516	10/15/2003	Peter A. R. Bennett	HOR-16REISSUE (EKC 90372)	6722
1333 7590 07/31/2007 EASTMAN KODAK COMPANY PATENT LEGAL STAFF 343 STATE STREET ROCHESTER, NY 14650-2201			EXAMINER LEE, SIN J	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



### DETAILED ACTION

1. Due to newly cited prior art, the following rejections are made non-final.
2. In view of the supplemental declaration filed on April 25, 2007, previous rejection on claims 1-50, 51, 53, 54, 56-61, 63-65 under 35 U.S.C. 251 is hereby withdrawn.
3. In view of the amendment, previous rejections on claims 1-51, 53, 54, 56-61 and 63-65 under 35 U.S.C. 112, first paragraph and 35 U.S.C. 251 are hereby withdrawn.
4. It is to be noted that present claim 6 was interpreted by the Examiner to mean that every steps of claim 1 (or 3) was carried out in situ in a printing press.

#### ***Claim Rejections - 35 USC § 103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 1, 2, 4, 6-12, 14-16, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka et al (5,756,258) in view of Fan et al (5,654,125), Sulzberg (4,173,554) and Fitzgerald et al (5,607,816).

Yamaoka teaches a photopolymerizable composition having a high sensitivity to *visible and near infrared light* at a wavelength of *600 nm or more* (col.1, lines 17-21). The photopolymerizable composition comprises (see col.4, lines 50-55), an addition-polymerizable compound, which has at least one ethylenically unsaturated double bond, a radical generating agent and squarylium compound (*present infrared-absorbing dye*). According to col.7, lines 17-25, Yamaoka's addition-polymerizable compound can either be a monomer (such as esters of unsaturated carboxylic acid and an aliphatic polyhydroxy compound as listed in col.7, lines 38-54) or a polymer having an

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ethylenically unsaturated double bond on the main or side chain (such as polymers obtained by a polymeric reaction of a polyvinyl alcohol, an epoxy resin, a phenoxy resin or the like with an unsaturated carboxylic acid – see col.8, lines 31-37) so that upon irradiation of an active ray to the photopolymerizable composition, the ethylenical compound cures due to addition-polymerization by the action of the radical-producing agent and the photodecomposition product of the squarylium compound. Thus, Yamaoka teaches present radiation sensitive resin. Yamaoka also teaches (col.7, lines 5-15, col.12, lines 66-67, col.13, line 1) that his composition can also contain a binder polymer such as poly(meth)acrylic esters as well as a colorant (a dyeing pigment). Yamaoka states (col.14, lines 18-20, lines 34-40) that his photopolymerizable composition can be used for making *printing plates* and that his composition is coated onto a base such as an aluminum sheet which surface is treated by graining and anodic oxidation processing (thus, Yamaoka teaches *present lithographic support having a hydrophilic surface*). The coated layer is then is subjected to irradiation of light, and the irradiation source includes *visible and near infrared lasers* (col.14, lines 28-33 and lines 45-47). Then the unexposed portions of the photosensitive sample are removed with a developer (such as *aqueous solutions* of an organic alkali chemicals) to provide a printing plate (col.14, lines 32-33, lines 48-49, lines 54-55).

Therefore, Yamaoka teaches present invention of claim 1 (it is the Examiner's position that Yamaoka's photopolymerizable composition containing *colorant* compound teaches present radiation sensitive ink) except for (i) the use of digital laser means, (ii)

present phthalocyanine pigment and (iii) present in-situ development step done on a printing press using lithographic fountain solution-covered dampening rollers.

Yamaoka does not teach the use of a digital laser. Fan et al teaches (col.1, lines 44-59) that by using digital laser, one can make corrections easily and quickly and also can save storage space and thus reduce cost. Therefore, it would have been obvious to one skilled in the art to use a digital laser in Yamaoka in order to obtain easy corrections and save storage space and reduce cost. Thus, Yamaoka in view of Fan would render obvious present digital laser.

Yamaoka teaches (col.7, lines 5-15) that his colorant comprises an organic or inorganic dyeing pigment. Phthalocyanine pigment is a conventionally used organic pigment, as evidenced by Sulzberg, col.2, lines 39-43. Since Yamaoka does not give specific names for his organic or inorganic dyeing pigment, it would have been obvious to one of ordinary skill in the art to use conventionally used organic pigment such as phthalocyanine pigment (which is an infrared-absorbing pigment as well) in Yamaoka as a dyeing pigment with a reasonable expectation of obtaining a photopolymerizable composition having a high sensitivity to visible and near infrared light. Therefore, Yamaoka in view of Sulzberg would render obvious present phthalocyanine pigment.

Yamaoka does not teach that his development step is done on-press. Fitzgerald et al teaches on-press development by the action of fountain solution and lithographic ink, which are deposited onto dampening rollers (see col.11, lines 47-67). Fitzgerald states (col.11, lines 28-46) that in the case of negative-working photoresist based upon photopolymerizable ethylenically unsaturated monomers, conventional wet development

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*can also be* employed using a diluted alkaline solution. However, Fitzgerald also teaches that the processing of conventional lithographic plates prior to their use on a printing press is time and labor consuming and involves the use of substantial quantities of organic chemicals (col.2, lines 65-67, col.3, lines 1-7). Thus, Fitzgerald teaches that there is considerable attractiveness for innovations that would satisfactorily eliminate or reduce conventional lithography's long-felt dependency upon the conduct of bath development and thereby permit the use of lithographic plates on a printing press immediately after exposure without required intermediary processing. Based on Fitzgerald's teachings, it would have been obvious to one skilled in the art to perform on-press development step in Yamaoka using fountain solution and lithographic ink, which are deposited onto dampening rollers so as to prevent time and labor consuming conventional development process. Therefore, Yamaoka in view of Fitzgerald render obvious present in-situ development step done on a printing press using lithographic fountain solution-covered dampening rollers.

Therefore, Yamaoka in view of Fan, Sulzberg and Fitzgerald would render obvious present inventions of claims 1, 2, 4, 6-12, 14-16 and 24.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka et al (5,756,258) in view of Fan et al (5,654,125), Sulzberg (4,173,554) and Fitzgerald et al (5,607,816) as applied to claim 1 above, and further in view of Reichel (5,492,059).

Yamaoka in view of Fan, Sulzberg and Fitzgerald is discussed above in Paragraph 6. Yamaoka does not teach present sleeve or cylinder as his support material. However, as evidenced by Reichel (col.1, lines 15-43), sleeve-shaped printing

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forms are known in the art to be advantageous as they can easily be mounted onto a form cylinder. It is the Examiner's position that it would have been obvious to one of ordinary skill in the art to provide Yamaoka's aluminum base material in a sleeve shape so that it can be readily mounted on the form cylinder. Therefore, Yamaoka in view of Fan, Sulzberg and Fitzgerald and further in view of Reichel would render obvious present invention of claim 5.

8. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka et al (5,756,258) in view of Fan et al (5,654,125), Sulzberg (4,173,554) and Fitzgerald et al (5,607,816) as applied to claim 1 above, and further in view of Mattor (3,847,614).

Yamaoka in view of Fan, Sulzberg and Fitzgerald is discussed above in Paragraph 6. Yamaoka does not state that his photosensitive composition is coated to the base at a predetermined thickness. However, as evidenced by Mattor, col.1, lines 37-41, it is known in the art that in general, the thicker the layer of a photosensitive material, the greater the run length of a printing plate. Based on Mattor's teaching, it would have been obvious to one of ordinary skill in the art to apply a certain thickness (which is predetermined) of the photosensitive composition in Yamaoka according to a desired (or predetermined) run length of the printing plate. Also, it is the Examiner's position that present means and present steps of claims 17 and 18 would also have been obvious to one of ordinary skill in the art at the time the invention was made because it has been held that broadly providing a mechanical or automatic means to replace a manual activity which has accomplished the same result involves only routine

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skill in the art. In re Venner, 120 USPQ 193. Therefore, Yamaoka in view of Fan, Sulzberg and Fitzgerald and further in view of Mattor would render obvious present inventions of claims 17-19.

9. Claims 37-41, 44, 45, 50, 53, 54, 56 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka et al (5,756,258) in view of Fan et al (5,654,125) and Fitzgerald et al (5,607,816).

Yamaoka teaches a photopolymerizable composition having a high sensitivity to visible and *near infrared light* at a wavelength of 600 nm or more (col.1, lines 17-21). The photopolymerizable composition comprises an addition-polymerizable compound, which has at least one ethylenically unsaturated double bond (*present reactive diluent*), a radical generating agent and squarylium compound (*present infrared-absorbing dye*). See col.4, lines 50-55. Yamaoka also teaches (col.7, lines 5-15, col.12, lines 66-67, col.13, line 1) that his composition can also contain a binder polymer such as poly(meth)acrylic esters (*present acrylate resin*) as well as a colorant (a dyeing pigment). Yamaoka states (col.14, lines 18-20, lines 34-40) that his photopolymerizable composition can be used for making *printing plates* and that his composition is coated onto a base such as an aluminum sheet which surface is treated by graining and anodic oxidation processing (thus, Yamaoka teaches *present lithographic support having a hydrophilic surface*). The coated layer is then is subjected to irradiation of light, and the irradiation source includes *visible and near infrared lasers* (col.14, lines 28-33 and lines 45-47). Then the unexposed portions of the photosensitive sample are removed with a



developer (such as *aqueous solutions* of an organic alkali chemicals) to provide a printing plate (col.14, lines 32-33, lines 48-49, lines 54-55).

Yamaoka does not teach the use of a digital laser. Fan et al teaches (col.1, lines 44-59) that by using digital laser, one can make corrections easily and quickly and also can save storage space and thus reduce cost. Therefore, it would have been obvious to one skilled in the art to use a digital laser in Yamaoka in order to obtain easy corrections and save storage space and reduce cost. Thus, Yamaoka in view of Fan would render obvious present digital laser.

Yamaoka does not explicitly state that his development step is done on-press. Fitzgerald et al teaches on-press development by the action of fountain solution and lithographic ink, which are deposited onto dampening rollers (see col.11, lines 47-67). Fitzgerald also states (col.11, lines 28-46) that in the case of negative-working photoresist based upon photopolymerizable ethylenically unsaturated monomers, conventional wet development can be employed using a diluted alkaline solution. However, Fitzgerald also teaches that the processing of conventional lithographic plates prior to their use on a printing press is time and labor consuming and involves the use of substantial quantities of organic chemicals (col.2, lines 65-67, col.3, lines 1-7). Thus, Fitzgerald teaches that there is considerable attractiveness for innovations that would satisfactorily eliminate or reduce conventional lithography's long-felt dependency upon the conduct of bath development and thereby permit the use of lithographic plates on a printing press immediately after exposure without required intermediary processing. Based on Fitzgerald's teachings, it would have been obvious to one skilled in the art to

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perform on-press development step in Yamaoka using fountain solution and lithographic ink, which are deposited onto dampening rollers so as to prevent time and labor consuming conventional development process. Therefore, Yamaoka in view of Fitzgerald render obvious present in-situ development step done on a printing press using lithographic fountain solution-covered dampening rollers.

Therefore, Yamaoka in view of Fan and Fitzgerald would render obvious present inventions of claims 37-41, 44, 45, 50, 53, 54, 56 and 58 (it is the Examiner's position that Yamaoka's composition which contains colorants would inherently be capable of being a printing ink as presently recited in claim 58).

10. Claims 42, 43, and 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka et al (5,756,258) in view of Fan et al (5,654,125) and Fitzgerald et al (5,607,816) as applied to claim 37 above, and further in view of Sulzberg (4,173,554).

Yamaoka in view of Fan and Fitzgerald is discussed above in Paragraph 9 (Yamaoka also teaches (col.7, lines 5-59, col.8, lines 1-37) the use of present reactive diluent). As discussed above, Yamaoka teaches (col.7, lines 5-15) that his composition can contain a colorant comprising an organic or inorganic dyeing pigment. Carbon black or phthalocyanine pigments are conventionally used inorganic or organic pigments, as evidenced by Sulzberg, col.2, lines 39-43. Since Yamaoka does not give specific names for his organic or inorganic dyeing pigment, it would have been obvious to one of ordinary skill in the art to use conventionally used inorganic or organic pigment such as carbon black or phthalocyanine pigment (both of which are infrared-absorbing

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pigments as well) in Yamaoka as a dyeing pigment with a reasonable expectation of obtaining a photopolymerizable composition having a high sensitivity to visible and near infrared light. Therefore, Yamaoka in view of Fan and Fitzgerald and further in view of Sulzberg would render obvious present inventions of claims 42, 43, and 46-49.

11. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka et al (5,756,258) in view of Fan et al (5,654,125) and Fitzgerald et al (5,607,816) as applied to claim 37 above, and further in view of Mattor (3,847,614).

Yamaoka in view of Fan and Fitzgerald is discussed above in Paragraph 9. Yamaoka does not state that his photosensitive composition is coated to the base at a predetermined thickness. However, as evidenced by Mattor, col.1, lines 37-41, it is known in the art that in general, the thicker the layer of a photosensitive material, the greater the run length of a printing plate. Based on Mattor's teaching, it would have been obvious to one of ordinary skill in the art to apply a certain thickness (which is predetermined) of the photosensitive composition in Yamaoka in order to provide a satisfactory run length of the printing plate. Therefore, Yamaoka in view of Fan, Fitzgerald and further in view of Mattor would render obvious present invention of claim 51.

12. Claims 59-61 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka et al (5,756,258) in view of Mattor (3,847,614), Fan et al (5,654,125) and Fitzgerald et al (5,607,816).

Yamaoka teaches a photopolymerizable composition having a high sensitivity to *visible and near infrared light* at a wavelength of *600 nm or more* (col.1, lines 17-21).

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The photopolymerizable composition comprises (see col.4, lines 50-55), an addition-polymerizable compound, which has at least one ethylenically unsaturated double bond, a radical generating agent and squarylium compound (*present infrared-absorbing dye*). According to col.7, lines 17-25, Yamaoka's addition-polymerizable compound can either be a monomer (such as esters of unsaturated carboxylic acid and an aliphatic polyhydroxy compound as listed in col.7, lines 38-54) or a polymer having an ethylenically unsaturated double bond on the main or side chain (such as polymers obtained by a polymeric reaction of a polyvinyl alcohol, an epoxy resin, a phenoxy resin or the like with an unsaturated carboxylic acid – see col.8, lines 31-37) so that upon irradiation of an active ray to the photopolymerizable composition, the ethylenical compound cures due to addition-polymerization by the action of the radical-producing agent and the photodecomposition product of the squarylium compound. Thus, Yamaoka teaches present radiation sensitive resin. Yamaoka also teaches (col.7, lines 5-15, col.12, lines 66-67, col.13, line 1) that his composition can also contain a binder polymer such as poly(meth)acrylic esters as well as a colorant (a dyeing pigment). Yamaoka states (col.14, lines 18-20, lines 34-40) that his photopolymerizable composition can be used for making *printing plates* and that his composition is coated onto a base such as an aluminum sheet which surface is treated by graining and anodic oxidation processing (thus, Yamaoka teaches *present lithographic support having a hydrophilic surface*). The coated layer is then subjected to irradiation of light, and the irradiation source includes *visible and near infrared lasers* (col.14, lines 28-33 and lines 45-47). Then the unexposed portions of the photosensitive sample are removed with a

developer (such as *aqueous solutions* of an organic alkali chemicals) to provide a printing plate (col.14, lines 32-33, lines 48-49, lines 54-55).

Therefore, Yamaoka teaches present invention of claim 1 (it is the Examiner's position that Yamaoka's photopolymerizable composition containing *colorant* compound teaches present radiation sensitive ink) except for (i) the step of applying the composition to a lithographic support at a predetermined thickness, (ii) the use of digital laser means and (ii) present in-situ development step done on a printing press using lithographic fountain solution-covered dampening rollers.

Yamaoka does not state that his photosensitive composition is coated to the base at a predetermined thickness. However, as evidenced by Mattor, col.1, lines 37-41, it is known in the art that in general, the thicker the layer of a photosensitive material, the greater the run length of a printing plate. Based on Mattor's teaching, it would have been obvious to one of ordinary skill in the art to apply a certain thickness (which is predetermined) of the photosensitive composition in Yamaoka in order to provide a satisfactory run length of the printing plate. Therefore, Yamaoka in view of Mattor would render obvious present step of applying the composition to a support at a predetermined thickness.

Yamaoka does not teach the use of a digital laser. Fan et al teaches (col.1, lines 44-59) that by using digital laser, one can make corrections easily and quickly and also can save storage space and thus reduce cost. Therefore, it would have been obvious to one skilled in the art to use a digital laser in Yamaoka in order to obtain easy

corrections and save storage space and reduce cost. Thus, Yamaoka in view of Fan would render obvious present digital laser.

Yamaoka does not teach that his development step is done on-press. Fitzgerald et al teaches on-press development by the action of fountain solution and lithographic ink, which are deposited onto dampening rollers (see col.11, lines 47-67). Fitzgerald also states (col.11, lines 28-46) that in the case of negative-working photoresist based upon photopolymerizable ethylenically unsaturated monomers, conventional wet development can be employed using a diluted alkaline solution. However, Fitzgerald also teaches that the processing of conventional lithographic plates prior to their use on a printing press is time and labor consuming and involves the use of substantial quantities of organic chemicals (col.2, lines 65-67, col.3, lines 1-7). Thus, Fitzgerald teaches that there is considerable attractiveness for innovations that would satisfactorily eliminate or reduce conventional lithography's long-felt dependency upon the conduct of bath development and thereby permit the use of lithographic plates on a printing press immediately after exposure without required intermediary processing. Based on Fitzgerald's teachings, it would have been obvious to one skilled in the art to perform on-press development step in Yamaoka using fountain solution and lithographic ink, which are deposited onto dampening rollers so as to prevent time and labor consuming conventional development process. Therefore, Yamaoka in view of Fitzgerald render obvious present in-situ development step done on a printing press using lithographic fountain solution-covered dampening rollers.

Therefore, Yamaoka in view of Mattor, Fan and Fitzgerald would render obvious present inventions of claims 59-61 and 63 (since Yamaoka states that his composition is used in making printing plates, it is the Examiner's position that present steps (e) and (f) of claim 59 are impliedly taught by Yamaoka).

13. Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaoka et al (5,756,258) in view of Mattor (3,847,614), Fan et al (5,654,125) and Fitzgerald et al (5,607,816) as applied to claim 59 above, and further in view of Nussel et al (5,317,970).

Yamaoka et al in view of Mattor, Fan and Fitzgerald is discussed above in Paragraph 12. Yamaoka does not explicitly state that the image is removed from Yamaoka's base after a print run has finished. However, as evidenced by Nussel, col.1, lines 15-25, a method of regenerating imaged printing plates, so that, after a prior imaging, they can be erased and re-used and re-imaged. It would have been obvious to one skilled in the art to regenerate Yamaoka's imaged printing plate by erasing the image and re-using the plate so as to save the cost. Therefore, Yamaoka in view of Mattor, Fan and Fitzgerald and further in view of Nussel would render obvious present invention of claim 65.

***Allowable Subject Matter***

14. Claims 13, 20-23 and 64 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the cited prior arts

teaches or suggests present limitation that the same radiation sensitive ink is used in the coating on the hydrophilic support as is used in the printing.

15. Claims 25-35 are allowed. None of the cited prior arts teaches or suggests present limitation that the same radiation sensitive ink is used in the coating on the hydrophilic support as is used in the printing.

### ***Response to Arguments***

16. Applicants argue that there is no motivation to combine Yamaoka et al'258 and Bi et al'650 in order to arrive at present on-press development process because Yamaoka uses near infrared radiation for exposure step whereas Bi uses UV radiation. Bi is a not a prior art for present rejection. Nonetheless, it is still the Examiner's position that one skilled in the art would want to carry out on-press development for convenience reason and also for saving time, *regardless of the type of the radiation used for the exposure step*. There is no evidence on the record showing that a method of development (whether that is a conventional wet development or an on-press development) should depend on the type of radiation used for the exposure step (besides, Yamaoka's composition is usable with visible, UV as well as near IR radiation as shown in col.14, lines 45-56). Also, applicants also argue that since fountain solutions and printing inks are considerably weaker in terms of developability compared to the conventional highly alkaline developers, one cannot merely pick a known development system and expect it to work with any type of imaging composition. However, Yamaoka's composition can be developed with inorganic alkali chemicals as well as with *aqueous* solutions of organic alkali chemicals (also, Yamaoka never states



that his composition can only be developed with highly alkaline developers). Applicants argue that for off-press development, the composition must be removable only in highly alkaline developers and not in fountain solutions used during printing. However, there is no evidence on the record showing that Yamaoka's composition can only be removed highly alkaline developers and not in fountain solutions. Also, as indicated above, Fitzgerald shows that a negative working photoresist can be developed through conventional wet development as well as through on-press development using fountain and ink solution. For these reasons, applicants' arguments are found to be unpersuasive.

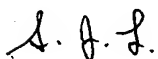
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

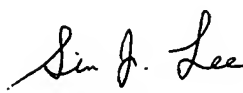
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you have questions on access to the Private PAIR system, contact the Electronic  
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S. Lee  
June 5, 2007



**SIN LEE**  
**PRIMARY EXAMINER**